Troubleshooting the IBM® Lotus® Domino® Administration Process

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Abstract: This white paper presents an intuitive and systematic way to troubleshoot issues involving the IBM® Lotus® Domino® Administration Process (AdminP). It explains why issues occur rather than providing solutions to specific issues, so Domino Administrators can learn how to troubleshoot AdminP issues and learn how the process is affected by the other product features with which it interacts. This document also includes updated information useful for troubleshooting the Administration Process for Domino release 8.

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1 Introduction

Understanding how the IBM Lotus Domino Administration Process (AdminP) works is essential to troubleshooting it effectively. For a description of what the Administration Process is and how it works, refer to the Administrator Client Help document titled "The Administration Process".

2 Troubleshooting AdminP "101"

Let's start with some basic troubleshooting procedures for AdminP.

2.1 The task

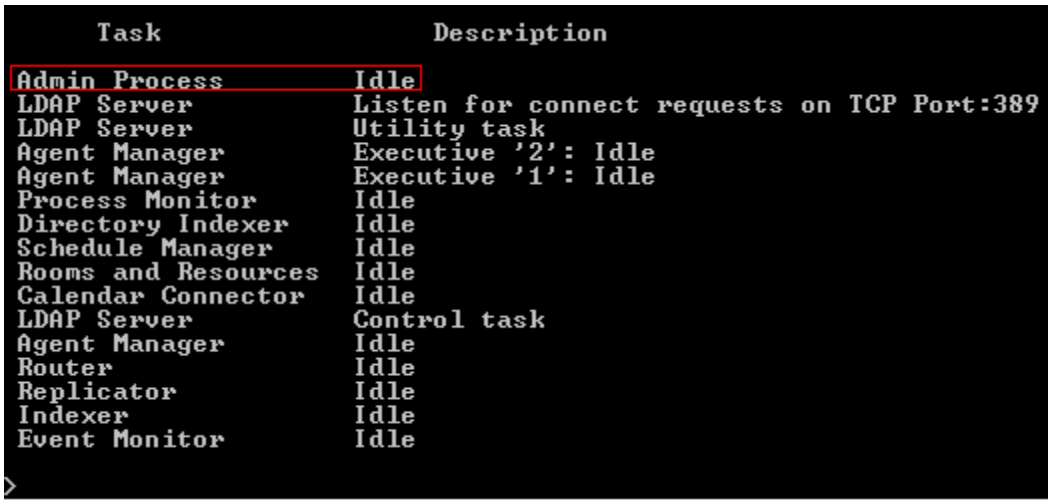
The Administration Process uses the Domino task "AdminP" to process requests. This task is loaded at startup from the ServerTasks= line in the Notes.ini file and must be enabled in order for the process to function.

If AdminP does not appear to be processing any requests, first ensure that the task is enabled. If it is, then you may need to issue the "tell adminp restart" command to the server console to restart the task. For example, one of the errors that may display when the AdminP task is not running properly, or at all, is the following:

> "The ADMINP task either does not exist or does not accept Tell commands".

To determine whether the AdminP task is enabled on a Domino server, issue the command "show tasks only" (or "sh ta on") from the server console to check for "Admin Process" in the list of tasks (see figure 1). If the task is not in the list, issue the command "load adminp" from the server console to load the task.

Figure 1. Task list and descriptions



2.2 The database

The Administration Request database (Admin4.nsf) can serve as a preliminary tool when troubleshooting AdminP issues. If an administration request errors out, there will be a log (or response) document under the parent request bearing a red '**X**' icon indicating that a condition has not been met. Double-click the failed request to reveal the error that caused the failure.

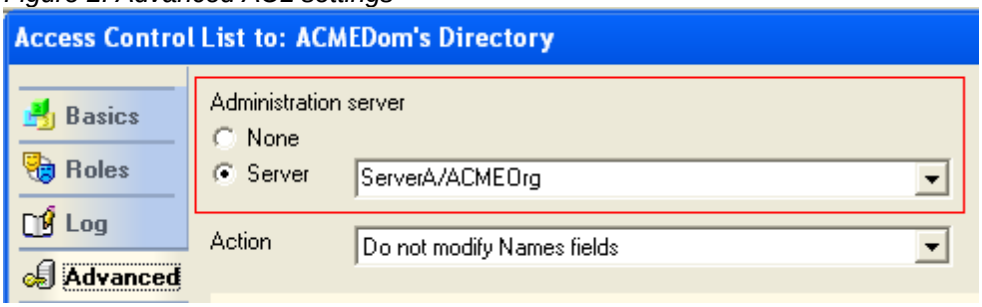
In addition to failed requests that produce an error, an AdminP request in a series of requests may not get processed but doesn't produce an error icon. Reviewing the Administration Request database for the last request in the series of requests reveals where the process stopped.

Understanding that requests are triggered by completions of other requests or by some other action, we can review the Administrator Client Help documents, “Administration Process Requests – One Domain” or “Cross Domain Administration Requests” for a list of links containing the process flow of common AdminP requests.

You may be able to get some indication as to the reason of the failure by selecting the document in the Help file matching the last request that did not get processed and reviewing the “Triggered by”, “Carried out on,” and “Carried out” sections for that request. Here’s an example from the Domino 7.0.2 Administration Client Help file:

**<><><>

Figure 2. Advanced ACL settings

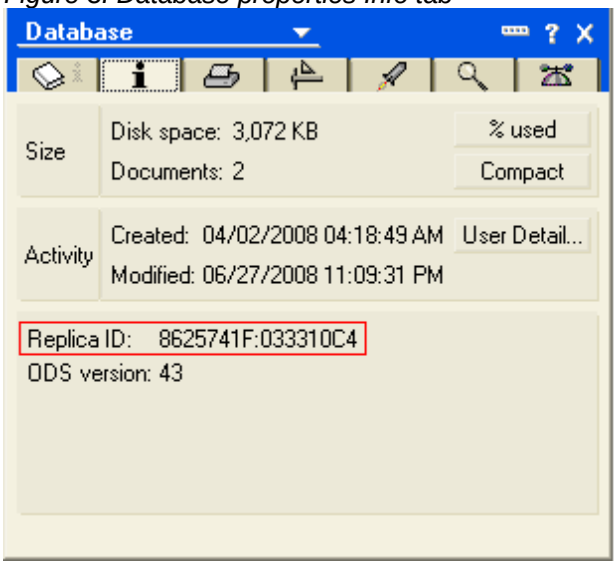


Note that AdminP requests can be generated on a server other than the Administration Server. This becomes important in the troubleshooting process because a request that is generated on a server that is *not* the Administration Server must first be replicated to the replica of Admin4.nsf that resides on the Administration Server. Then, to complete the process, the response document for that request must be replicated back to the replica of Admin4.nsf on the requesting server.

If AdminP requests are not being processed or are taking a long time to process, it could be an indication that the requesting server is replicating with the Administration Server only on a schedule, or that it does not have an established connection with the Administration Server.

Another troubleshooting measure to consider regarding replication and the Administration Request database is to ensure that the Admin4.nsf databases on each server are replicas of each other. You can do this by checking the Info tab in the database properties of each replica (see figure 3).

Figure 3. Database properties Info tab



2.4 Access control and AdminP

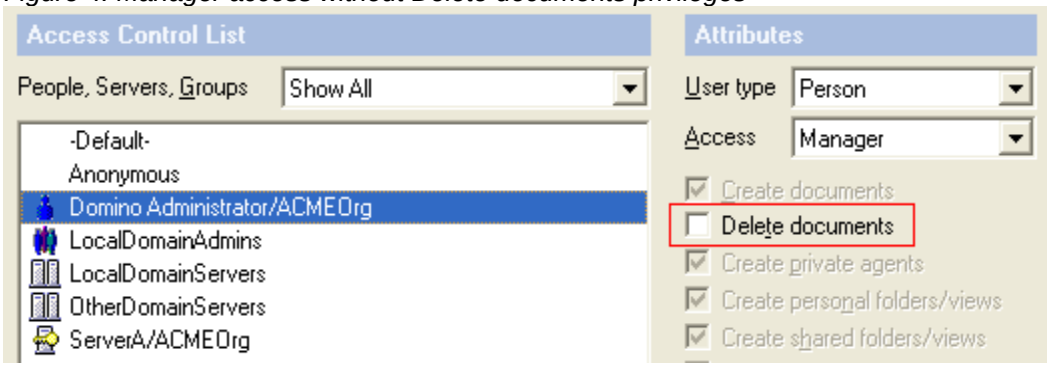
Another reason AdminP requests fail or are not processed is because the requesting administrator or server is not listed, or does not have the correct level of access, in the ACL of Admin4.nsf, Certlog.nsf, or Names.nsf. Ideally the requesting administrator and requesting server should have the appropriate level of access to these databases for the requests that they generate.

The requesting administrator or server must be able to make the necessary changes to the target databases in order for AdminP requests to successfully process. This is especially important for renames and recertifications.

When attempting Delete Person or Delete Server requests, it is important to ensure that the requesting administrator or requesting server has the Delete Documents privilege in the ACL of the Domino Directory.

Keep in mind that a server or person may have Manager access of a database but may not have Delete documents privileges in the ACL (see figure 4). If this is the case, then a Delete request will fail or not process correctly.

Figure 4. Manager access without Delete documents privileges



Incorrect security settings in the Server document of the Administration Server or the requesting server will also cause AdminP requests to fail or not get processed. It is important these settings are correct when processing Move or Create Replica requests; if they are not, you will receive the following error:

> *"You are not authorized to create new replica databases on this server."*

To verify whether a person or a server has the appropriate access to create replicas on a destination server, review the Create new replicas field under the Server Access section in the Server document's Security tab (see figure 5).

Figure 5. Create new replicas field

Server Access	Who can –
Access server:	All users can access this server
Not access server:	
Create databases & templates:	
Create new replicas:	
Create master templates:	
Allowed to use monitors:	*
Not allowed to use monitors:	
Trusted servers:	

3 Direct Deposit

Direct Deposit is a feature introduced in Domino 8.0 that allows Administration Request databases to replicate certain requests automatically in a non-clustered Domino server environment. Table 1 shows the AdminP requests that can be direct deposited, which is important to understand when troubleshooting this feature.

In the Associated Requests column the requests in boldface type are those that can be direct deposited, and requests in italics are those that cannot be direct deposited. You may notice that some Direct Deposit requests are triggered by or trigger non-Direct Deposit requests. From a troubleshooting standpoint, this table should help you understand why AdminP requests are delayed in a non-clustered environment even though Direct Deposit is enabled.

Table 1. AdminP requests that can be direct deposited

Request Name	Associated Requests
Create New Replica	no associated Direct Deposit requests
Move Database	includes the **Approve Replica Deletion** and **Delete Replica After Move** requests
Approve Replica Deletion	generated from the **Move Database** request
Delete Mail File	includes the **Get Mail File Information for Deletion** request
Get Mail File Information for Deletion	generated from the **Delete Mail File** request
Rename Person in Free Time Database	generated from a *Rename User* request
Promote New Mail Server Access	generated from a *Move Mail File* request
Create New Mail File Replica	generated from the *Move Mail File* request
Delete Replica After Move	generated from the **Move Database** request
Delete in Design Elements	generated from the *Delete Person* request
Get Replica Information for Deletion	generated from the **Delete Database** request
Delete Database (non-mail file)	includes the **Get Replica Information for Deletion** request
Promote New Roaming Server's Access	generated from the *Move Roaming User to Another Server* request
Delete Replica (for Roaming User)	generated from the *Move Roaming User* and *Delete Roaming User* requests
Create Roaming Replica	generated during the configuration stage (Roaming File Replica Creation Options dialog box) of *Create Roaming User*
Delegate IMAP Mail Files	no associated Direct Deposit requests
Delete Domino Server from Catalog	generated during the *Delete Server* request

Rename Web User in Free Time Database	generated during the *Rename Web User* request
Monitor Roaming User's Replication Stubs	generated during the *Update User from Non-roaming to Roaming* request
Delegate Mail File on the Administration Server	no associated Direct Deposit requests
Change the server on which the agent runs	generated during the **Move Database** request
Update Replica Settings	generated during the **Move database** from a non-cluster server request
Rename in Reader / Author fields (for shared agents)	generated during the *Rename User* request
Rename in Reader / Author fields (for agents)	generated during the *Rename User* request
Delete in Reader / Author fields (for agents)	generated during the *Delete User* request
Monitor Server's SSL status in Domino Directory	which is one of three *Server Registration* requests when you enable the SSL port during registration
Delegate Mail File on Home Server	user initiated

NOTE: To disable Direct Deposit, add the parameter ADMINP_DONT_ATTEMPT_DIRECT_DEPOSIT=1 in the Notes.ini of the server initiating the AdminP requests.

AdminP requests that are Direct Deposit requests have a specific server on which to be processed. Non-Direct Deposit requests may be processed on any or all servers in the domain. So, although Direct Deposit speeds up the processing of requests that are candidates for Direct Deposit in a non-clustered environment, it is still recommended to configure a clustered environment to process all other AdminP requests efficiently.

4 Troubleshooting cross-domain AdminP

As we discussed in Section 2 above, AdminP does not operate independently of other tasks and features of Domino, and the cross-domain Administration Process adds yet another level of complexity to troubleshooting AdminP issues.

You can troubleshoot cross-domain AdminP using all the techniques mentioned above; however, to do it effectively, you must understand the difference between how AdminP functions in one domain versus how it functions in multiple domains. The key concept to understanding cross-domain AdminP is that only the following requests can be processed across separate domains:

- Delete person in Domino Directory
- Delete server in Domino Directory
- Rename server in Domino Directory; that is, upgrade the server name from flat to hierarchical
- Rename person in Domino Directory
- Create replica

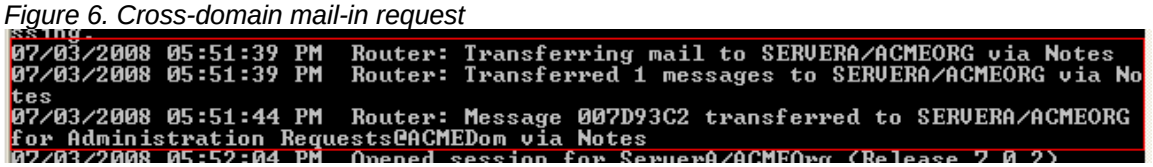
- Get replica information for deletion. This request is generated when you delete a database and its replicas.

For a description of cross-domain AdminP, refer to the Administrator Client Help document titled "Processing administration requests across domains".

4.1 Routing and cross-domain AdminP

Administration Request databases on separate Domino domains are not replicas of each other; therefore, new requests and response documents are not replicated between them for processing as they are in a single domain. Cross-domain AdminP uses the Router task to send (mail in) requests to Admin4.nsf on the destination server (see figure 6).

Figure 6. Cross-domain mail-in request


07/03/2008 05:51:39 PM Router: Transferring mail to SERVERA/ACMEORG via Notes
07/03/2008 05:51:39 PM Router: Transferred 1 messages to SERVERA/ACMEORG via No
tes
07/03/2008 05:51:44 PM Router: Message 007D93C2 transferred to SERVERA/ACMEORG
for Administration Requests@ACMEDom via Notes

If the Router task is not enabled or not running properly on the source or destination servers, the requests from the source server will never get mailed in to the destination server's Administration Request database for processing.

4.2 Configuration

If a cross-domain AdminP request fails or does not process, there will be an error in the Server Console indicating why the request failed. Typically, the first troubleshooting step for failed cross-domain AdminP requests should be to double-check the fields in the Cross-Certification documents, Cross-Domain Configuration documents, and the Connection documents between the source and destination servers for any incorrect entries.

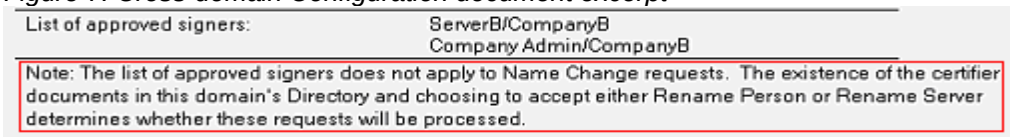
4.3 Cross-domain rename requests

During the processing of rename requests for a person or a server via cross-domain AdminP, the following error may display:

> *"A required certifier entry was not found in the Name and Address Book; consult the Notes Log for details on the specific entry."*

This error indicates that the certifier of the destination Organization or Organizational Unit (OU) is not found in the Domino Directory of the requesting domain. Review the Cross-domain Configuration document to verify this (see figure 7).

Figure 7. Cross-domain Configuration document excerpt


List of approved signers:
ServerB/CompanyB
Company Admin/CompanyB
Note: The list of approved signers does not apply to Name Change requests. The existence of the certifier documents in this domain's Directory and choosing to accept either Rename Person or Rename Server determines whether these requests will be processed.

To have cross-domain renames process successfully, the required certifier must be placed in the Certificates view of the destination domain's Domino Directory under Notes Certifiers.

5 Debugging AdminP

While processing AdminP requests you may see only the message "Admin Process: Checking for <type of request> requests to perform" on the Server Console without any other indication of

whether the request is being processed. For troubleshooting purposes, you may want more information about what AdminP is doing.

Adding the parameter “DEBUG_ADMINP_REQUEST_PROCESSING=1” or “DEBUG_ADMINP_REQUEST_PROCESSING=2” for more verbose logging yields useful information about what AdminP is doing while attempting to process requests.

You can pipe out the output of this debug to a text file by adding “DEBUG_OUTFILE=<output file path>” to the Notes.ini. These parameters are dynamic, and you can write them to the Notes.ini using the “set config <parameter and value>” command in the Server Console.

To disable the debug you can set the debug parameter to “0” as well as remark (REM) it out, or delete the parameter from the Notes.ini entirely. Below are some sample outputs from a cross-domain Create Replica request.

NOTE: The differences in the output are in **red** text.

**<><><>

Processing Server
07/06/2008 09:19:25 PM Router: Message 000CC308 delivered to Administration Requests
Adminp processing request: Create Replica

> DEBUG_ADMINP_REQUEST_PROCESSING=2

Requesting Server
07/06/2008 09:24:18 AM Admin Process: Checking for new requests to perform
Adminp processing request: **[Accelerated Create Replica] on [Discussion]**
07/06/2008 09:24:19 AM Admin Process: Received the following status performing
a Accelerated Create Replica request on Discussion. Received the status -- Sour
ce and destination servers are not clustered -- trying to create Discuss.nsf on
servera/acmeorg; a replica creation request has been generated for further processing.
07/06/2008 09:24:19 AM Router: Transferring mail to SERVERA/ACMEORG via Notes
07/06/2008 09:24:19 AM Router: Transferred 1 messages to SERVERA/ACMEORG via Notes
07/06/2008 09:24:24 AM Router: Message 000D366A transferred to SERVERA/ACMEORG
for Administration Requests@ACMEDom via Notes

Processing Server
07/06/2008 09:24:20 AM Router: Message 000D366A delivered to Administration Requests
Adminp processing request: [Create Replica] on [Discussion]
**<><><>

To help determine the proper number of threads to use in your environment, run a “show tasks” (or “sh ta”) command during a period of heavy AdminP processing. If you see idle AdminP threads, there may be too many running; conversely, if all threads are servicing a request, more AdminP threads may be needed. Up to 10 AdminP threads can be added.

6.2 Choosing an Administration server

The choice of an Administration server is an important decision for all environments. You have two options in selecting an Administration server: A dedicated server or a multi-purpose server.

The dedicated server offers many advantages over a multi-purpose server in larger environments because it has no users or non-essential tasks competing for resources, such as mail routing. As a result, it processes requests more efficiently. Moreover, request times can be shortened as a result of more available resources.

The main advantage of a multi-purpose server is its ability to leverage an existing asset, but it does have performance disadvantages because it must compete for resources while performing its tasks. This may not be an issue in smaller environments, but in larger, more complex environments in which resource optimization is paramount you many need to consider a dedicated Administration server.

You may also want to consider distributing the load of AdminP by configuring Extended Administration servers. For more information on how to configure Extended Administration servers, see the Administration Client Help document “Using an extended administration server”.

6.3 AdminP statistics

Another troubleshooting measure is to monitor the activity of the Administration Process through the Monitoring Results database (Statrep.nsf). Table 2 is an excerpt from the Domino 7.0.2 Administration Client Help showing the AdminP statistics that can be monitored and their descriptions.

These statistics are most useful for comparing servers to see where AdminP activity is relatively high or low. If you find such discrepancies, consider reallocating the Administration Server role to a subset of databases, to make the load more equitable.

Table 2. Administration Process statistics

Administration Process statistic	Statistic is updated when AdminP
ACLsModified	modifies a database ACL.
ReaderAuthorModified	modifies a database due to a user name change, resulting in a change to Reader and/or Author fields for that database.
ReplicasDeleted	deletes a mail file due to a mail database move, or when user, the user's mail file and replica are deleted. This statistic is also updated when replicas are removed due to a Delete Database request.
ReplicasCreated	creates a mail file due to a mail file move.
AppointmentsModified	updates an appointment due to a name change.

ProfilesModified	updates the calendar profiles due to a user's name change.
DesignElementsDeleted	removes a design element from a database. In most cases this occurs when a user is deleted and the agents that were created by the user are removed from a database.
DirectoryDocumentsDeleted	deletes entries from the Domino Directory, for example, deletions due to deleting a user or a server.
DirectoryDocumentsModified	modifies entries in the Domino Directory, for example, when a user is renamed.
DirectoryDocumentsAdded	updates entries in the Domino Directory, for example, when Mail-In database entries are added for future processing.
Cross Domain Request Sent	sends requests from one domain to another domain. This occurs when cross-domain processing is enabled.
Cross Domain Request Rejected	receives or rejects requests from another domain. This occurs when cross-domain processing is enabled.
Cross Domain Request Accepted	receives or accepts requests from another domain. This occurs when cross-domain processing is enabled.

6.4 Time-consuming AdminP requests and performance

It is important to understand from a performance perspective how certain requests are processed within a Domino domain.

Consider the **Rename in Reader/Author fields** request, which runs on every server in the domain. Since Reader and Author fields are elements of documents, this request must search every document of every database on every server in the domain to complete its process. So, the request can result in process latency that's proportional to the number of databases present and the number of documents in each database.

Rename in Access Control List is another request that is carried out on every server in the domain, meaning that every ACL on every database in the domain is queried for this request. This request may also produce process latency that's proportional to how the number of servers in your domain(s) and the number of databases on those servers.

The **Rename in Design Elements** request also runs on every server in the domain, searching for the target person's name in shared design elements in every database of their respective administration servers. For large, batch rename requests, you may see a process latency for all these requests in relatively large environments.

In Release 8 of Domino the process latency of the **Rename in Reader/Author fields** and **Rename in Design Elements** requests is addressed by a namelist. The namelist is an updated list that allows the rename request to search *it* for the target name(s) instead of searching every database on the server. If AdminP does not find the name in the namelist, it does not search that database, thus significantly decreasing the time it takes to process these requests.

7 Other troubleshooting considerations

Just like other product areas within Lotus Notes and Domino, unique issues may arise that require other fault isolation and troubleshooting techniques based on environmental factors. Here is a limited list of questions that should also be considered when you have an AdminP issue:

1. Are there any network issues that may be preventing requests from processing?
2. What are the incompatibility issues in the mixed environment with respect to AdminP?
3. Are there any third-party applications involved?
4. Are there any agents involved in the process?
5. What commonalities do the affected users have (same mail server, same release, etc.?)
6. Were there any changes on the server or in the environment around the time when the issue began to occur?
7. Could any of the databases/documents involved be corrupt (Admin4.nsf, Names.nsf, etc.)?

8 Conclusion

The key to troubleshooting the Administration Process is to have a thorough understanding of how AdminP operates while also being aware of other product features that have a bearing on AdminP requests. Staying up to date on the changes in these product areas in subsequent releases of Domino will be helpful in troubleshooting AdminP as well. Note that there may be abnormal issues that arise that are beyond the scope of this document.

9 Resources

IBM Support Techdoc #7002573: "Troubleshooting script for Domino server Administration Process (AdminP)".

Domino 7.0.2 Administration Client Help:
http://www-12.lotus.com/ldd/doc/domino_notes/7.0/help7_admin.nsf/Main?OpenFrameSet

The Lotus Domino Support search page:
http://www-306.ibm.com/software/lotus/support/domino/search.html

Lotus Domino Support forums & communities:
http://www-306.ibm.com/software/lotus/support/domino/community.html

10 About the author

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